

# NEW NOMENCLATURE OF THE AUSTRALIAN ANTS OF THE *POLYRHACHIS GAB* FOREL SPECIES COMPLEX (HYMENOPTERA: FORMICIDAE: FORMICINAE)

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## Abstract

Two former infraspecies of the complex of *Polyrhachis gab* Forel (*P. gab aegra* Forel and *P. gab senilis* Forel), are raised to specific status. *P. gab tripellis* Forel and *P. crawleyella* Santschi, synonymised earlier with *P. gab*, are considered to be synonyms of *P. senilis*. All three valid species (*P. gab*, *P. aegra* and *P. senilis*) are illustrated. Notes on their distribution and nesting habits are included.

## Introduction

The relationship of *Polyrhachis gab* Forel, its various infraspecies and *P. crawleyella* Santschi, were discussed by Bolton (1974). He examined the types of *P. gab tripellis* Forel and *P. crawleyella* and considered them to be synonyms of *P. gab*, although his paper indicated that he had not seen the type of that species. He also suggested that *P. gab aegra* Forel was synonymous with *P. gab*, and questioned validity of *P. gab senilis* Forel as an entity separate from *P. gab*.

I have examined and directly compared all types relevant to this discussion, along with abundant material from a wide range of localities across northern Australia. Three valid species are here recognised: *P. gab* (Fig. 1), *P. aegra* (Fig. 2) and *P. senilis* (Fig. 3), with the synonymy indicated below. The features distinguishing these species are as follows:

- 1 Head covered with dense appressed silvery pubescence, which almost completely obscures the underlying sculpturation; antennal scapes longer (SI > 109) ..... 2
- Head with only very dilute whitish or yellowish sub-erect pubescence, which does not obscure the underlying sculpturation; antennal scapes shorter (SI < 107) ..... *P. aegra*
- 2 Mesosomal dorsum reticulate-punctate; this sculpturation more or less hidden by silvery pubescence (Fig.1), which is only slightly less dense than that on the head and gaster ..... *P. gab*
- Mesosomal dorsum foveolate-punctate; pubescence confined to head and gaster and virtually absent from the mesosomal dorsum (Fig. 3) ..... *P. senilis*

Appropriately labelled voucher specimens identified in the course of this study have been distributed to leading Australian and overseas ant collections.

The SEM micrographs were prepared with a Hitachi S-530 Scanning Electron Microscope, using gold-coated specimens.

Conventions of measurements and indices are those of Bolton (1973), and Kohout (1988a). The available names have been set out by Taylor & Brown (1985) and Taylor (1987). Distribution data follows the 1-degree grid cell system used by Taylor (1987) and Kohout (1988b). The abbreviations used for institutions and depositories are those of Taylor & Brown (1985).

*Polyrhachis gab* Forel, 1880

*Polyrhachis guerini* r. *gab* Forel, 1880 : 116. Syntype (?) workers. AUSTRALIA, GMNH (Examined).

*Polyrhachis gab* Forel; Dalla Torre, 1893 : 362 (raised to specific status).

*Polyrhachis aegra* Forel, 1915 **stat. nov.**

*Polyrhachis (Chariomyrma) gab* v. *aegra* Forel, 1915 : 109. Syntype workers. AUSTRALIA: Queensland, Atherton, GMNH, SMNH, ANIC, (Examined).

*Polyrhachis senilis* Forel, 1902 **stat. nov.**

*Polyrhachis gab* v. *senilis* Forel, 1902 : 520. Syntype workers. AUSTRALIA: Queensland, Townsville, GMNH, ANIC (Examined).

*Polyrhachis (Chariomyrma) gab* v. *tripellis* Forel, 1915 : 108. Syntype workers, females. WESTERN AUSTRALIA: Kimberley District, Derby, Noonkanbah, GMNH, SMNH, ANIC (Examined). **syn. nov.**

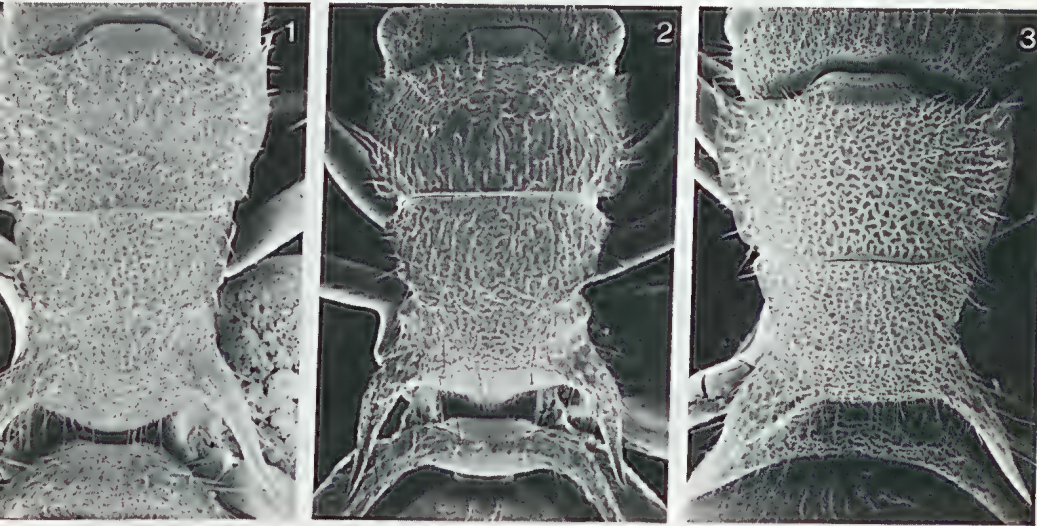
*Polyrhachis comata* Crawley, 1915 : 237. Holotype, paratype workers. AUSTRALIA: Northern Territory, Stapleton, BMNH, OUM (Examined). Nom.preocc. (Junior homonym of *Polyrhachis comata* Emery, 1911).

*Polyrhachis crawleyella* Santschi, 1916 : 243. (Replacement name.) **syn. nov.**

## Distribution

All three species inhabit open forests and woodlands, particularly areas with thin grass cover and bare rocky patches. They nest mostly in the soil, under logs and stones, between grass roots, but also in the matrix of moist rotting logs, and occasionally under the bark of standing trees. Their distribution is apparently restricted to northern Australia and all three species have

broadly overlapping ranges. *P. gab* has been recorded in Queensland from the Torres Strait Islands and Cape York Peninsula south to Townsville, areas to the south of the Gulf of Carpentaria, and from the Northern Territory, near Darwin (Grid cells 10/142, 12/130, 12/131, 14/144, 18/139, 18/142, 19/146, 19/147). *P. aegra* is known in Queensland from the Torres Strait Islands and Cape York Peninsula south to Mackay (Grid cells 10/142, 16/145, 17/145, 17/146, 19/146, 19/147, 20/148, 21/148). *P. senilis* is the most widespread species of the complex, ranging in Queensland from the Atherton Tableland to Townsville, and westwards across the 'Gulf Country' to the Northern Territory and northern Western Australia (Grid cells 12/130, 12/136, 14/126, 16/125, 16/128, 16/145, 17/123, 17/145, 18/124, 18/127, 18/138, 18/139, 18/142, 19/146, 19/147).



FIGS 1-3. Scanning electron micrographs of mesosomal dorsum of *Polyrhachis* spp.: (1) - *P. gab*; (2) - *P. aegra*; (3) - *P. senilis*.

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## References

- BOLTON, B., 1973. The ant genus *Polyrhachis* in the Ethiopian Region. *Bulletin of the British Museum (Natural History)* (Entomology series) 28 : 283-369.
- BOLTON, B., 1974. New synonymy and a new name in the ant genus *Polyrhachis* F. Smith (Hym., Formicidae). *Entomologist's Monthly Magazine* 109 : 172-180.
- CRAWLEY, W.C., 1915. Ants from north and south-west Australia (G.F. Hill, Rowland Turner) and Christmas Island, Straits Settlements. Part II. *Annals and Magazine of Natural History* 15: 232-239.
- DALLA TORRE, C.G. de, 1893. 'Catalogus hymenopterorum huiusque descriptorum systematicus et synonymicus.' Vol.7 *Formicidae (Heterogyna)*. Lipsiae. 289 pp.
- FOREL, A., 1880. Études myrmécologiques en 1879. *Bulletin de la Société vaudoise des sciences naturelles* 16 : 53-128.
- FOREL, A., 1902. Fourmis nouvelles d'Australie. *Revue Suisse de Zoologie* 10 : 405-548.
- FOREL, A., 1915. Results of Dr E. Mjöberg's Swedish Scientific Expeditions to Australia 1910-1913. 2. Ameisen. *Arkiv for Zoologi* 9 : 1-119.
- KOHOUT, R.J., 1988a. A new species of *Polyrhachis (Polyrhachis)* from Papua New Guinea with a review of the New Guinean and Australian species (Hym., Formicidae: Formicinae). *Memoirs of the Queensland Museum* 25 (in press).
- KOHOUT, R.J. 1988b. Nomenclatural changes and new Australian records in the ant genus *Polyrhachis* Fr. Smith (Hym., Formicidae: Formicinae). *Memoirs of the Queensland Museum* 25 (in press).
- SANTSCHI, F., 1916. Rectifications à la nomenclature de quelques formicides (Hym.). *Bulletin de la Société Entomologique de France*, 1916 : 242-243.
- TAYLOR, R.W., 1987. 'A Checklist of the Ants of Australia, New Caledonia and New Zealand (Hym.: Formicidae).' CSIRO Australia. Division of Entomology Report. No.41: 1-92.
- TAYLOR, R.W. & BROWN, D.R., 1985. Hymenoptera: Formicoidea in *Zoological Catalogue of Australia*, 2 : 1-149, 306-348.